

REMARKS

Favorable reconsideration is respectfully requested.

The claims are 13 to 15.

Firstly, Applicants acknowledge with appreciation the indication in the Examiner Interview Summary Record dated May 31, 2005 that the finality of the Official Action of May 5, 2005 has been withdrawn.

The above amendment is responsive to points set forth in the Official Action. In this regard, support for the amendment to claims 13 and 14 is evident from the disclosure at page 4, lines 14 to 18 of the present specification where it is pointed out that the inkjet recording paper according to the present invention does not require a coating for improving ink absorption although such coating may be applied optionally to the extent that the ink absorption of the paper itself is not hindered.

Claim 14 is directed to the case where the paper has no coating at all.

The significance of this amendment will become further apparent from the remarks below.

Claims 13 to 15 are rejected under 35 U.S.C. 103(a) as being unpatentable over Akiya et al. (U.S. 4,758,461) in view of Suenaga et al. (U.S. 6,133,170).

This rejection is respectfully traversed.

A brief discussion of the present invention will be of assistance in appreciating Applicants' reasons for traversal of the rejection.

The present invention provides an ink jet recording paper having a high ink coloring density and a high ink absorption speed, consisting essentially of mercerized pulp and paper making pulp, and having a liquid transfer length of 100 mm or less.

As described on page 4, lines 14 to 18 of the present specification, the ink jet recording paper according to the present invention does not require a coating for improving ink absorption since the paper itself has excellent ink absorption speed and can be used as non-coated type ink jet recording paper.

Therefore, it becomes possible to eliminate a coating process and thus provide an inexpensive ink jet recording paper that can be manufactured in one step (page 6, lines 2 to 1 from the bottom of the specification). Further, the present invention can provide a recording paper having a high ink absorption speed compatible with high speed ink jet printers and exhibiting high ink coloring density.

Claim 13 sets forth the case where a coating may be optionally applied provided that said coating is not applied for improving ink absorption.

Claim 14, which depends on claim 13, sets forth the case where the paper has no coating. Again, please see page 4, lines 14 to 18 of the specification in this regard.

Turning to the rejection:

Akiya et al. (U.S. Patent 4,758,461) discloses a recording paper comprising a fibrous substrate paper on the surface of which a silicon containing type pigment and a fibrous material of the substrate paper are present in a mixed state. The recording paper has a Stockigt sizing degree ranging from 0 to 75 sec. and a basis weight ranging from 90 to 200 g/m² (claim 1).

The fibrous material constituting the substrate paper is composed mainly of wood pulp (typically LBKP and NBKP), and the aqueous coating liquid comprising a silicon containing type pigment and an aqueous binder is coated on the surface of the substrate paper (col. 3, lines 58 to 65). By setting the coating amount within the range of 2 to 10 g/cm², the recording paper surface is in a state where the silicon containing type pigment and the fibrous material are mixed with each other (col. 5, lines 37 to 51; col. 6, lines 30 to 37).

The recording paper of Akiya et al. contains a large amount of a silicon containing type pigment with high ink absorbing capacity in the surface layer (i.e. the coating layer) of the recording paper. Thus, the recording paper has a high probability of the ink droplets being trapped and absorbed by the pigment, and therefore feathering and diffusion of the ink can be inhibited, whereby it may be considered that dot shape is improved and also the coloring density enhanced (col. 6, lines 14 to 22).

In contrast, in the ink jet recording paper of the present invention, mercerized pulp is essentially used and a predetermined liquid transfer length is defined in order to improve both ink

absorptivity and coloring density of the paper itself, without the need of a coating layer including a silicon containing type pigment with high ink absorbing capacity. Such feature of the present invention is unobviously different from that of Akiya et al. wherein a coating layer excellent in high ink absorbing capacity is formed on the surface of the fibrous substrate paper to thereby provide a coated type recording paper having enhanced aqueous-ink absorptivity and coloring density.

As recognized by the rejection, Akiya et al. does not disclose the use of mercerized pulp as a fibrous material of the substrate paper.

On the other hand, Suenaga et al. (U.S. 6,133,170) discloses a low density body such as a sheet having a density of 0.05 to 0.45 g/cm³, comprising fine fibers having a bond-reinforcing factor of at least 0.15 and curled fibers having a wet curl factor of 0.4 to 1.0 (see claim 1). The low density sheet of Suenaga et al. may contain, in addition to the specific curled fibers and fine fibers, natural pulp fibers including mercerized pulps (col. 6, lines 50 to 53; col. 6, line 66 to col. 7, line 6).

Even if the mercerized pulp taught by Suenaga et al. is used in the recording paper of Akiya et al., one would merely arrive at a recording paper comprising a fibrous substrate paper containing mercerized pulp in addition to the wood pulp (typically LBKP and NBKP) on the surface of which a silicon containing type pigment and a fibrous material of the substrate paper are present in a mixed state.

The paper resultant from such combination of Akiya et al. and Suenaga et al. is completely unsuggestive of the ink jet recording paper of the present invention wherein no coating layer of high ink absorbing capacity comprising a silicon containing type pigment is formed on the surface of the paper.

The Rule 132 Declaration of Y. Tomotake, the first named inventor herein, attached hereto, shows that the present invention can provide non-coated ink jet recording paper having the coloring density equivalent to that of the coated ink jet recording paper of Akiya et al. in which mercerized pulp is mixed in the fibrous substrate paper.

Furthermore, since curled fibers are used in Suenaga et al., a large volume of cavities are produced in the paper (col. 2, lines 20 to 23) and thus a low density paper is provided. When a paper having a low density is used as an ink jet recording paper, ink coloring density may decrease due to absorption of ink into paper.

In the Rule 132 Declaration of May 13, 2003, there was shown, as Comparative Sample 1, a paper substantially in accordance with "Example 9" of Suenaga et al. except that NBKP (bleached softwood kraft pulp) was replaced by mercerized pulp. As shown in the Table on page 6, the paper of Comparative Sample 1 shows the coloring density lower than those of Samples 1. and 2 corresponding to Examples 7 and 8, respectively, of the present invention, in which no curled fibers are contained.

Additionally, the paper of Comparative Sample 1. has relatively rough surfaces, so that when a high speed ink jet printing is carried out, paper feeding is hindered by the roughness of paper and printing is frequently discontinued.

For the foregoing reasons, it is apparent that the rejection on prior art is untenable and should be withdrawn.

No further issues remaining, allowance of this application is respectfully requested.

If the Examiner has any comments or proposals for expediting prosecution, please contact undersigned at the telephone number below.

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October 14, 2005